

Abstract of the Disclosure

A speculative execution capability of a processor is exposed to program control through at least one machine instruction. The at least one machine instruction may be two instructions designed to facilitate synchronization between parallel processes. According to an aspect, an instruction set architecture includes circuitry that handles a speculative execution instruction and a speculation termination instruction. The speculative execution instruction may be an instruction that takes first and second operands, causes the processor to speculatively execute additional instructions if a memory location contains a value, and causes the processor to start executing instructions from an address indicated by the second operand if a mis-speculation occurs, and the speculation termination instruction may be an instruction that causes the processor to begin retiring the additional instructions.